

MAINE FARMER AND MECHANIC'S ADVOCATE.

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"OUR HOME, OUR COUNTRY, AND OUR BROTHER MAN."

Winthrop, Maine, Saturday Morning, June 11, 1842.

EZEKIEL HOLMES, Editor.

Whole No. 491.

Maine Farmer and Mechanic's Advocate.

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Agriculture produces a patriot in the truest acceptation
of the word.—Talleyrand.



MAINE FARMER.

Who wants a thousand Dollars?

Why, who in this world do you think, but the Poor Printer to be sure, and a great deal more if he can get it. Heavy payments become due for paper—help, apparatus needed in the office, and of the times—money scarce and every body in need of it. But some of you have got a little. It cannot be all annihilated. It only ceases to circulate, as the waters do in a cold time, and we know the trouble of pumping at a frozen well. There are a great many of our subscribers who have got a little which they are not in particular need of, and which they would have paid us long ago, if they had only been reminded of it. To such, therefore, we appeal in great confidence that we shall not cry in vain. Send it along before we get into the clutches of the lawyer, and have to pay it all out for his tender mercies, when it does come, instead of to our creditors who need and deserve it. The smallest favors of the kind will be duly appreciated, acknowledged and credited, for we are really in want, and are therefore in a much more grateful mood, than we shall be, by and when you all pay up at once.

Pumpkin Combat.

We have been challenged to a mortal combat by our friend E. G. Buxton, of North Yarmouth, or in other words to a combat of pumpkins, by seeing who would raise the largest pumpkin during the ensuing season.

He has kindly furnished us with the weapons in the shape of a pocket full of *Harrison* pumpkin seeds, and left us to choose our ground and the distance, with such seconds as we might select. We have of course accepted, as a gentleman should, and are determined to carry out the affair with all the punctilio that the "code of honor" requires. We are sensible, however, that we have the disadvantage. Our adversary had probably taken his stand and had his seconds flourishing on the spot long before us, besides being more skilled in the weapons, he can handle them vastly better and with more effect. Still, we have no idea of being "posted," especially in a matter of such immense importance to society and the world, as whether a Winthrop or North Yarmouth pumpkin measures the nine hundred and ninety ninth part of a hair's breadth larger than the other.

Members of Congress fight for causes of less importance than that; surely their constituents should not be found lacking in courage when greater causes of difference occur. We therefore "go it" with indomitable stubbornness, determined to cover ourselves with pumpkin leaves if we can't with laurels. Come on E. G. B. Pumpkins forever.

American Farmer.

This Old Friend to the Farmer has just commenced its 24th volume. We well remember the time of its birth, and how odd it seemed to see a newspaper published every week devoted exclusively to Agriculture. Under the Fatherly care of Mr. Skinner, its first Editor, and I. I. Hitchcock the publisher, it soon grew up vigorously and was a favorite throughout the Union. After Mr. Skinner relinquished the chair Editorial, it was ably conducted by G. B. Smith. After he retired Mr. Hitchcock conducted it for a short time, and then for a time, we believe it took a short nap, but finally waked up under the auspices of Mr. Roberts, who conducted it manfully for a while—we believe it had a short resting spell after he laid down the pen—but again roused up under its old friend and proprietor, Mr. Skinner, who breathed new energy into it until he found himself better provided for, we presume, in some of the departments at Washington, when somebody else—"we not who" took the reins. Whatever may be his name, he manages it well, evincing both experience and ability, and we hope that we will find an ample reward in "his basket, and his store" and in his conscience.

It is now published by S. Sands, Baltimore, at \$2.50 per annum. It has done vast good in its day and generation, and may it long live to dispense still more usefulness, for altho' it can now number many co-laborers in the field where it once stood alone—it continues to "hoe its row" with its usual strength and skill.

Wool—Wash it clean.

Wool is good for nothing this spring, said a farmer to us the other day, and his face began to lengthen as he spoke—wool is good for nothing this spring—he was fumbling in his empty pocket with one hand, and he held a memorandum of the amount of his tax bill in the other. I am dunned for taxes, and I have no money and nothing that I can raise or make, will bring it. If Congress can do any thing to relieve the country either by tariff, "judicious" or not, or any thing else, I hope they never may eat or drink again till they do it.

The old farmer was more than half right in his remarks. As a marketable article wool is dull enough—but yet as an article of clothing it is as good as ever, and the best thing that can be done with it at present, is, to send it to some of the manu-

factories and let them work it up for you on shares. If the article should be in demand again soon, and the price rise, your cloth will rise proportionally, and if not, why you will have something to clothe yourself and family. But what we were going to say is this: whether in good or in poor demand, by all means wash it clean. A little pains while washing the sheep will be of advantage to the owner in the event of selling, or having it made up on shares. If to be sold, the purchaser will allow you a better price, and besides will have confidence in you in future, and if to be worked up for you, the manufacturer will do it on better terms, if it were thoroughly washed and secured as it ought to be.

We cut the following from the Worcester Spy.
SOMETHING WORTH THE NOTICE OF FARMERS IN MAINE.

Apples.—We conversed, a few days since with a gentleman residing in the vicinity of Boston, who was now upwards of 30 acres of land in orcharding, his trees in a fine healthy state, and in full bearing. He was then scouring the state, for the purpose of buying young and vigorous trees to enlarge his orchard much beyond its present extent. When we saw him he had eight hundred barrels of apples on hand in prime order, for which he could have three dollars and a half a barrel. He tells us that the demand for exportation is limited only by the supply; that to every part of the globe, where American vessels go, they are a profitable article of export, and that to an almost unlimited extent.

One merchant in Boston, applied to him last fall, for 500 barrels of Baldwin apples at two dollars and a quarter a barrel, to ship to Calcutta in the East India! He had shipped about the same quantity for several previous seasons, and with uniform success. Shipments to England, the West Indies, South America, the Mediterranean, and other places give equally good returns. The apples of New England keep much better than those raised farther South, and are preferred for shipping on that account.—*Spy*.

In conversation with Major Wood of this town who has had much experience in the business, he gave us the following as the result of his practice and experiments.

In order to keep apples well, they should be carefully picked from the trees by hand, a little before they are ripe, so that they will shiver or wilt a very little indeed. Then put them in an open barrel, until the weather becomes somewhat cool.

Then head them up carefully and set them on the south side of some building until the ground begins to freeze. Then put them into an out cellar made in some sandy or gravelly knoll, which shall be dry. Keep this cellar of a uniform cool temperature, by allowing the door or some other hole to be kept open. It may be necessary, or at any rate, convenient, to have a thermometer kept in it to note the temperature. In this way, Baldwins and Russets may be kept in a good state until the first of July.

He further states that if a row of apple trees were planted by the side of permanent fences throughout the state, and grafted to Baldwins, Russets and other good fruits, the farmers might in time realize much money. Our apples keep better than those raised at the South. We recollect, not long since, of reading a paragraph in the Southern Planter, respecting the several fruits raised in Mississippi. Among other good things, the writer mentioned apples, but at the same time regretted that there could be none raised in the State that would keep a week after becoming mature.

FROSTS.—We had, in common with all New England a heavy frost on the 20th of May, but it did little damage, because most of the fruit trees, had not put out their blossoms. We have had several slight frosts since, which did no hurt that we could hear of. We believe that the farmers of Maine suffer less by late spring frosts, than those of Massachusetts, and further south.

Premature Falling of Apples.

FRIEND HOLMES:—I see by your last Farmer, a query from my friend F. W. N., about an apple tree that is in a fix, not on account of its "laziness," I contend, but it is owing to its "bringing up" it is only sticking to its first principles, an error which "a sober second thought" can so correct, that it may no longer be a discount of "small potatoes" it alias apples.

But to be serious, I should like to know if the first fruit of the tree was not taken off long before it had come to maturity,—"just to try it?" I think, if the truth was known, such would prove to be the fact. Whether the plucking of the first fruit of an apple tree before the "middle age" of it causes premature falling of its fruit in after years is a rule without exception, I know not, but I have no doubt of it in more than one instance.

It is said that Plaster sown liberally on a tree when in full blossom will set the fruit effectually. Will F. W. N. try it on a part of the tree in question? I would suggest to F. W. N. to dig down among some of the roots of the tree and expose some 3 or 4 to the influence of the light and heat of the sun and another season have them transplanted, to see if their fruit (if it is lot alone until ripe) will discount before the day of grace, as does their parent.

E. G. B.
New Yarmouth Centre, May 30, 1842.

Put in the Corn for Fodder.

MR. EDITOR:—By the way, I would most earnestly impress it upon the farmers, as I think they cannot realize a full crop of hay owing to there being so much winter killed on loamy clayey soils the past winter, together with so much that will fail to yield a fair crop of that that was "laid down" last year—to put in an acre or two of corn—plough your ground, and if it is in good order and free from weeds, sow on 24 or three bushels of Southern corn, harrow it in well and if the season is tolerably favorable the amount of fodder from the ground will astonish almost any one who has not seen such a crop. If the ground is subject to weeds and grass the corn had better be put in drills, say about 20 inches or two feet apart. A little green manure put in the drill would well pay for the trouble.

By some there has been an objection to raising corn for fodder in this way, for, say they, cattle will not eat it if it becomes dry and hard—Allowed, if it is cured in the same way that flags are dried

or flax is rotted—but cut it up before the frost kills it, let it wilt in the field, then dry and cure it under cover and if your cattle won't lick the whole as it is, boy said he would the stick of candy if it would or—ly come to him, then I am very much mistaken. I have raised it for three years past and the greatest trouble about it was this, there was not half enough of it. I, with the multitude raised some of the best to be "Tree Corn" fodder which grew very stocky and immediately after I cut it up I spread it about in the barn so that it became dry without losing its best qualities, and my cows would not only eat the leaves but they would eat with alacrity, the whole stock which surprised me, knowing that it was very seldom that they would eat, "but stocks" in that way. I chewed some of the stock myself and found there appeared to be something extra about those dried under cover and those dried and wet a score of times with the sun and dew of heaven. If you should put in an acre or two of Ruts Bagas, (plant these near your buildings so that your hens and turkeys will keep the grass hoppers from killing them) Sugar Beets, White field Carrots &c. your cattle would like you all the better next fall and winter, if you will only season the corn fodder well with them. Remember a merciful man looks well to the comfort of his dumb beast.

E. G. B.

May 30, 1842.

Calf and Pig contrasted again.

MR. HOLMES:—I noticed an article in your paper of the 7th inst. in which the writer says we yankees guess too much, and do not make our statements conform to mathematical certainty. And further says, it is a yankee's privilege to guess right or wrong. Now I am a full blooded yankee, you will allow me to guess that the cost to the farmer, of keeping a female calf for thirty months from the time it was dropped, is more than the cost of keeping a female pig for the same time, and goes on to guess it in his own way. Now Mr. Editor, I protest against such guessing. Let him know the cost of his calf and pig, cost of keeping for both, interest, taxes and risk, and he will find a great difference between the facts and guessing. Let him use his figures something like the following, and see how he will come out. Say pig at four weeks old,

Cost of keeping one year 3 shillings per week,	26.00
2d year at 4 shillings per week,	34.67
Last 6 months while fattening, 6 shillings,	26.00
Int on \$28 one year,	1.82
Interest on 34.67, one year,	2.08
Taxes and risk, two years,	1.00
	93.57
Cr. 28 pigs, and good luck at that,	53.00

10 loads of manure,	28
300 lbs. pork, Scts	10
	53

CALF.—at 10 weeks old,	5.00
Cost keeping 1 year, 1 ton hay,	10.00
Summering first summer,	2.00
2 year summering, 2d summer,	3.00
Second winter 1-2 tons hay,	15.00
Third summer,	5.00
2 taxes and risk one dollar,	1.00
Interest,	.90
do	2.60
	43.90
400 lbs. beef at 3 c.	12.00
	55.90

	40.37
	31.90
	8.47
I guess I ought to have half as much for manure,	6.00
	14.47

making 14.47 in favor of Bossy, can any man keep a sow for breeding and have 4 litters of pigs in 30 months, without its costing him the above sum? You may call this trash, but many a poor farmer has experienced it to his sorrow.

GUESS WORK.

Pruning Trees.

MR. HOLMES:—I have been mortified, as I have travelled through this County, to see the manner in which many orchards are trimmed. The subject has been heretofore mentioned in your paper, but not being remembered or heeded, I still see very improper trimming. It is a fact that one horizontal limb, which spreads almost directly from the body of the tree, will bear more fruit than as many as you please that stick right up straight, and have nothing to obstruct the downward circulation of the sap. Those that spread directly, or nearly so from the body of the tree, and check the downward circulation of the sap, are the only bearing limbs; hence those should be saved, if possible. The true shape of a tree, is that of an umbrella turned bottom upwards. The trees may be trimmed in the nursery, until five feet high, and then suffered to branch off in every direction. Trimming, after that, should be confined to the middle of the tree. Perpendicular branches, such as cross each other, shoots, suckers, and other limbs, should be cut off until the tree is sufficiently thin in the limbs and top, to let in the sun, rain, and air, always remembering to cut twenty small limbs rather than one large one, unless dead, and this must be done every year. A spring use of the saw and knife will be called for every year. Every limb must be cut smoothly and as close as it can be, that it may heal over the better. As to the convenience of cultivating under the tree, it is vain, if the tree cannot be made by any means to bear fruit enough to pay for the ground it occupies, cut it down, but do not murder it and then expect fruit from right up limbs.

E. W.

The following essay which we copy from the New England Farmer, is worth a perusal. E. W.

RENOVATION OF EXHAUSTED SOILS.
MR. PUTNAM:—The importance of some efficient and more economical method of renovating exhausted lands, than any now commonly pursued, is more deeply felt as the need of a more successful and productive agriculture is better appreciated. It is true that much has been done by means of

"improved husbandry," to arrest the desolating march of the scourging system of former days, which at one time bid fair eventually to depopulate the older settled parts of our country. Yet, judging from the past, it is also true that there are now more fields to be won to former fertility, than ordinary methods of fertilizing will accomplish in perhaps a century to come. Tracts of exhausted or worn out lands are found in almost every section of the country, and in some of the best lands of the country. These have been the result of cultivation, and are considered nearly worthless. Others, by scanty crops, now impoverish those who work them, or return a bare compensation for the labor applied; while some, from peculiar location, or other circumstances favorable to their improvement, have become productive and valuable. Cases enough of the latter class are to be found beyond a doubt that the direct principle of being made highly productive, and after being put in good condition, it is thought by some that if well manured, few other lands will give a better return for the labor and expense bestowed in their cultivation.

As a general remark, it may be said of these exhausted lands that they are light, dry, and easy of cultivation, and possess all the constituents of a good soil, except food for plants. This exception is the most important one; but of this the land has been in a great measure deprived by severe cropping or cultivation, invited to excess by the easy and generous nature of the soil; and the question ever presented to the owner, or the passer by even, is, *How can this most essential element of fertility (food for plants) be profitably and economically restored to this exhausted soil?*

A yankee's reflection would seem enough to show that ordinary means fall far short of meeting the whole case. The extent of these lands—their location, often distant from the dwellings of owners—and the expense of labor and material, if manure is to be hauled, have a bearing, as regards both practicability and economy. And farm-yard manure, which affords the principal, of means generally employed to fertilize, is very limited in quantity, and the various animal substances used for the same purpose, afford less than is desirable for those lands which are now in a state of improvement, necessarily leaving exhausted fields to remain exhausted, unless successful resort is had to some other equal or superior method of fertilizing, as a substitute.

In looking for this substitute, various inquiries present themselves, naturally leading to the investigation of the principles, to seek out the sources of fertility and its sources, to determine what food plants, what its nature or qualities, and where and how it can be obtained.

To assist in this investigation, Geology and Chemistry have disclosed facts no less valuable than those obtained by farmers from experience and observation. Geology teaches that there was a period in the history of our earth, when vegetable and animal matter was unknown; and we therefore infer that the plants or vegetables first brought into existence, must of necessity have subsisted solely upon elements found in water, atmospheric air, and the rock formations of the earth. In support of this inference, chemistry tells us that upon analysis, all the elements of vegetable matter are found to exist in water, air, and the rock formations. This is perhaps sufficient evidence as to what are the original sources of fertility or food for plants.

Geology shows further, as the earliest rock formations clearly indicate, that the first vegetable products of the earth, were lichens, mosses, and other inferior plants, none of them capable of producing seeds or fruits suitable for the sustenance of men or animals. And no traces of the more valuable plants are found, except where preceding generations of the inferior orders had crumbled to decay and their remains mingled with the primitive earths or decomposed rocks, had formed what is commonly termed a productive soil.

From this we might infer that the elements of fertility existing in a primitive state, were competent to the growth and perfection of inferior plants, but were so diluted or attenuated, as to be incompetent to the perfection of the more valuable plants. We further infer that the inferior plants which gathered nourishment from its primitive sources for their own subsistence, were in fact concentrating and condensing food for the benefit of their successors; and when decomposed, went to the formation of a soil, and themselves became food for succeeding plants; and by presenting food in a more condensed form than in its primitive state, gave sufficient nourishment for the perfection of plants of a higher order—the latter of course exhausting the soil of nutrition precisely in proportion to the amount which they drew of the remains of the former from the soil.

In support of these inferences, it is a well known fact that mosses and some other plants of equal merit, do flourish in situations where their organs can have access apparently to little or nothing but the primitive elements. And modern experiments have repeatedly shown that seeds of grain planted in pure sand or pounded glass, and supplied only with air and light, and distilled or pure water of suitable temperature, will grow up to the time of flowering; but after that period, literally die of starvation, and do not perfect their seeds, evidently for want of more substantial and abundant sustenance than is requisite in the first stages of growth, or than the organs of the plants can gather from a state of primitive diffusion for the last stages of growth or perfection of the plants. Here is evidence that the primitive elements now possess what we have supposed to be their primitive powers, and evidence also that all plants draw a portion at least of their early nourishment from its primitive sources. The fact that plants require more food, and make heavier drafts upon the soil when ripening their seeds—of course exhaust the soil more than during previous growth, is well illustrated by the broom corn plant. This plant gives the most luxuriant farm crop grown in New England. Its weight of stem and foliage is perhaps double the weight of stem and foliage of Indian corn on land of same extent and quality, and from its ponderous growth might be expected to exhaust the soil more than any other crop; and yet it is said by many of long experience with it, to exhaust less than almost any other. The obvious reason for this result, is that from the effect of early frosts, a full crop of seed is not obtained often than an average of perhaps once in four or six years—the principle object of the grower being the "brush" and not the seed of the plant. But when a full crop of seed is obtained, the exhaustion—making due allowance for the large return to the soil of stalks and leaves of the plant left at harvest, is thought equal to that of other crops.

Experience has further shown that where the chemist can find no vegetable matter in the composition of a soil, the farmer can obtain no valuable product. And every farmer who cultivates in corn an acre of sward land of light quality, and observes the difference in crops between a good sward well plowed under, and where there was little or no sward when plowed, sees full evidence that decomposed vegetable matter is food for plants.

The universal practice among good farmers, on lands long cultivated, of saving weeds, brambles, reeds, and straw like substances, to go through the cattle yard or compost heap to the plow-field, which observation and experience has always approved, is evidence to the same point, as is also universal experience where new lands with ages of accumulated vegetable matter, are brought under cultivation, and can hardly leave a doubt in any

mind that decomposing vegetable matter affords the essential food that in any soil is necessary to the perfect development of grain-producing and fruit-bearing plants, or plants of the highest order in the scale of vegetable excellence.

This essential food for plants has been called *geine*. This term is not very familiar to farmers, but is nevertheless useful as a definite name for the solid aliment of plants, existing in the soil or at the earth's surface, distinct from the gaseous aliment which the atmosphere affords to plants in all places, and also distinct from the frame-work of plants for their mechanical support, or which seasons their food or incites their organs to greater activity in appropriating nutrition. Some difference of opinion seems to exist among chemists in relation to *geine*. One has denied its existence further than its being a development of carbon; and another has discovered that it is compounded of at least ten different substances, some of which are compounds, and prescribes to use the names of its constituents as far as they are known—carbonic and apocrenic acid, &c.—leaving the remainder in "an unknown" and undesignated state. This may be all well for metaphysicians; but as it proposes no change of measures to the practical man, in regard to the use, or affecting the value of the substance itself, it offers no inducement as an equivalent for rendering his knowledge more complex and obscure, by a formidable array of technical terms, which time alone it seems will develop the full number.

It is highly desirable that this matter should be divested of all unnecessary drapery, and left as simple and plain as may be, to insure clear views and correct practice; for the practical farmer has but little interest in the support of mere theory, and is likely to be more bewildered than benefited by "wonderous technicalities," and however proper it may be to "call things by their right names," he will doubtless prefer to use the simple term *geine* until it is shown to lead to error in practice, or some practical benefit is promised by the change; for the same reason that he will prefer to call a certain kind of grain, *wheat*, rather than attempt to designate it by naming its components—*starch*, *gluten*, &c.—merely because these substances happen to exist in the different varieties in ever varying proportions.

Dr. S. L. Dana, of Lowell, whose incidental researches in agricultural chemistry are resulting in the highest benefit to the State, by advancing the science of agriculture, has rendered invaluable service by his discoveries relative to the nature and qualities of *geine*. His definition of it includes all decomposed organic matter, or all decomposed substances that have once possessed either vegetable or animal life.

In speaking of *geine* in connection with the earthy constituents and soluble salts of soils, he says: "the earths are the plates, the salts the seasoning, the *geine* the food of plants;" and describes *geine* as being a brownish black powdery mass, the result or product of the putrefaction or decomposition of organic substances, "existing in two states, soluble and insoluble: soluble *geine* is the food of plants; insoluble *geine* becomes food by air and moisture." "Geine forms the basis of all the nourishing part of all vegetable manures." "It is the principle which gives fertility to soils." "It absorbs and retains nearly its own weight of water without seeming moist;" and "is continually dissipated in air and moisture, it is finally wholly dissipated in air, leaving only the inorganic bases of the plant with which it was once combined."

It has long been a conceded point, that the production of a plant is not a new creation, but merely a new arrangement or new combination of pre-existing particles of matter. But the changes which this matter undergoes previous to the growth of the plant, and after they are broken up, have been mostly unknown until the discoveries of Dr. Dana have supplied those links in the chain of evidence which were necessary to trace in connection its circling history, through its ceaseless round of ceaseless changes.

These discoveries, with the other facts adduced, give evidence that *geine* comprises all the nutritive food which plants draw from the earth, and is furnished by the decomposition at the earth's surface, of vegetable or animal substances, the elements of which all originated from the primitive sources of fertility existing in air, water, and the rock formations.

Evidence is given also that all plants draw a portion of their subsistence from the primitive sources of fertility, and to the extent that they do this, they are capable of augmenting the quantity of *geine* in the soil on which they grow, by being covered in the soil, the reservoir which nature has provided to protect from dissipating atmospheric influence, and yield as they demand it, this concentrated or condensed nutrition which is necessary for the perfection of grain-growing and fruit-bearing plants.

An important evidence is given also in regard to the nature of *geine*, which shows that precisely at the period when it is reduced to a soluble state and prepared to be taken up by the roots of plants, it is exposed to the atmosphere, it assumes a gaseous form and escapes. That which was of aerial origin—leaving the earthy parts or elaborated salts to mix with and measurably fertilize the earth—returns to the atmosphere and mingles with kindred atoms, to range the ethereal space with pristine freedom or fertilize other fields, if perchance it comes within range of the appropriating powers of their growing plants.

If these evidences are correct, it follows that all substances are valuable as food for plants, in proportion to the amount of *geine* which they yield, making due allowance for expense of bringing it to a soluble state; and plants, to be grown as fertilizers, are valuable in proportion to the amount of the elements of *geine* they gather from the atmosphere during growth; and the exposure of soil, containing soluble *geine*, to the active influence of midsummer atmosphere (as in the case of deep cultivation among growing crops, or of high summer fallows), however necessary it may be for the destruction of weeds or grass, inevitably results in the loss of fertilizing properties.

These facts, duly considered, appear sufficient to direct in the choice of the most economical measures to restore fertility, and the most efficient measures to preserve it.

Having ascertained that *geine* is the substance requisite to restore fertility to exhausted land, the next point for consideration is to find the most economical method of obtaining it; and this leads to an estimate, as far as may be, of the comparative value and expense of materials producing *geine*. These are various, including all vegetable and animal substances. Substances purely animal, although possessing intrinsic value, perhaps the highest in the scale, and worthy of great consideration where acres or half acres only are concerned, are too limited in quantity to affect materially the whole subject of exhausted lands, and therefore their consideration, as well as that of some other enriching substances, may, in this view of the subject, be omitted.

Farm-yard manure, peat or swamp muck, and the elements of *geine*, obtained from the atmosphere by the agency of grasses or other plants, to plow under, are generally all within the reach of every owner, and taken together doubtless afford ample means to sustain the fertility of the fertile, and enrich every acre of exhausted land. The first is limited in quantity to the amount of manure or stock kept; the second is generally abundant, and in many places exhaustless; and the principles of

the third are coextensive with the atmosphere itself, and for aught that appears, have energy now unimpaired as when, in the beams of the first morning, they were appointed the basis of all future vegetable and animal growth.

It will readily be seen that it is difficult to find the exact relative value of these substances, or the exact expense of obtaining them, as more or less of variation in different cases, may always be found in both these particulars. An approximation to the truth in the case, as to a general proposition, is therefore all that can be expected, and may be all that correct practice will require; and for this purpose there are facts and data that may perhaps be deemed sufficient.

There is doubtless more generally a fixed or definite idea of the value of farm-yard manure, as a fertilizer, than of any other enriching substance; it may therefore be considered a better type of manures, or standard for comparison, than any other. Dr. Dana, taking his own analysis in connection with that of others in other places, estimates a ton of green cow-dung to yield about one hundred and five pounds of dry solid *geine*, calling all its hay insoluble *geine*. He says, "it rapidly changes to that state; its passage through the animal, like boiling, has put it in a state to become *geine* much sooner than hay would change, if buried in the soil."

Estimating the value of common farm-yard manure at one dollar per ton, and allowing a ton of it to give the same quantity of *geine* that is given by a ton of solid green cow dung, (few would place it so high), and *geine* from this source can be obtained at a fraction less than 33 cts. for 100 lbs.

To ascertain the value of swamp muck, three samples from a small swamp in Northampton, were forwarded to Dr. Dana for analysis. These samples were taken from different depths, to give as near as could be, an average quality of the whole deposit. Samples from other swamps, situated from thirty rods to three miles distant from this were also forwarded, which proved more or less rich in *geine*, and gave an average quality nearly equal in value to the three samples first mentioned. The average of the three samples, after being drained of water equal to one third of the weight of the muck when first dug, which it will readily do, if piled up a few weeks, gave a rate of four hundred and thirty-four pounds of *geine* to the ton. The cost of digging and piling muck, where it can be thrown up with a shovel or handily run out with a barrow, will not commonly exceed 25 cents per ton, in its half dry state; and allowing the ton to give 434 lbs. will furnish *geine* in an acid state or mingled with acids, for something less than 6 cents for 100 lbs.

Muck or peat when first dug, is, from its sourness, so unfriendly to vegetation, that it cannot be employed with advantage in any case, except perhaps in small quantities and on a dry soil, unless it be subjected to some process for neutralizing its acidity. To effect this object, various processes have been proposed; all of them however seemingly too expensive; and for a cheap process, which is doubtless attainable, the farmer must yet look to the practical chemist.

In the absence of a better method, take that pursued by Mr. Phinney, of Lexington, who, after repeated experiments with compost made of two parts peat mud to one of green stable manure, all well mixed and fermented, says: "A load of this compost will give as great a produce and a more permanent improvement to the soil, than the same quantity of stable manure. In this opinion I am not alone. Other accurate and intelligent cultivators have made similar experiments with similar results." Additional testimony, to sustain Mr. Phinney's opinion as to these results, might be given, were it necessary; but these results can be true only on the supposition that peat contains as much *geine* for plants as the same quantity of stable manure, as is shown by analysis it does contain.

The peat from Mr. Phinney's farm appears not to differ essentially from best samples of swamp muck; and was found on analysis by Dr. C. T. Jackson, of Boston, to contain less silica and more salts and vegetable matter or *geine*, than the same weight of dried horse dung. Other samples of peat were found by Dr. Jackson to give from one or two to six per cent. less vegetable matter than that from Mr. Phinney.

A compost of farm-yard manure and muck, in the same proportions that Mr. Phinney employed similar materials, including the labor of composting, hauling, &c., will afford *geine* fit for immediate use, at about two thirds the cost of that from the farm yard alone. And further, the quantity and value of fertilizing matter, on many farms, may thus be trebled, without further increase of live stock or cost of material from abroad. This leaves no doubt as to the expediency and economy of calling in the aid of peat and swamp muck to fertilize, rather than to depend exclusively upon the very limited product of the farm yard for that purpose, and is perhaps sufficient evidence as to the intrinsic value of peat and swamp muck, compared with farm yard manure.

A comparison of the expense of obtaining *geine* from its original sources, by the aid of growing plants, with that of obtaining it from the farm yard, is, in the absence of facts which the practical chemist alone can furnish, more difficult, and should be taken with a liberal allowance.

Mr. Phinney says he "ascertained by an accurate experiment, that on the first of May, a single foot of sward land, taken from a field that had been mown for a number of years, and thinly set with redtop and herdsgrass, contained nine ounces of vegetable matter, consisting of the roots and tops of the grasses; giving at this rate over twelve and a quarter tons to the acre."

How much *geine* a ton of this vegetable matter will yield, is, in the absence of a chemical test, a matter of conjecture. In view, however, of the pains-taking care of good farmers, to collect and save, ounces even, of similar substances to enlarge the manure heap, it seems but reasonable to suppose that it is at least half as valuable as the partly dry swamp muck we have been considering, and if so, the twelve and a quarter tons will give twenty-six hundred and fifty-eight pounds of *geine*.

The cost of growing this amount of vegetable matter, must of course vary with the varying cost and condition of the land on which it is grown, governed somewhat by the more or less favoring season.

Suppose the value of the land be estimated at ten dollars per acre, which is doubtless more than the average estimated value of our exhausted lands, and allow that an entire unfed and uncultivated two years growth of clover, herdsgrass and redtop, on such land, just equals Mr. Phinney's "thinly set" redtop and herdsgrass sward, which had been mown, and the cost of 2638 lbs. of *geine* from this source—if the grass seed be sown with some other crop and not chargeable with expense of plowing and harrowing—will stand as follows:

Two years' interest on cost of land,	\$1 2
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If no fallacy or error has been admitted in the estimates thus far, the comparative expense of furnishing our exhausted fields with guano from the three sources considered, will stand as follows:

Dressing one acre with twelve and a quarter tons of vegetable matter, consisting of tops and roots of grasses, grown upon the spot, ready carted and spread for plowing under, will cost \$3 08

Dressing one acre with an equal amount of fertilizing matter from a compost of swamp muck and farm yard manure, 6 4-5 tons, at estimated cost of materials, \$3 40

Cost of composting, overhauling, reloading, carting to field, and spreading, varying with distance of carting—say average 60 cts. per ton, 4 03

Total, \$7 48

Dressing one acre with an equal amount of fertilizing matter from the farm yard, 8 2-3 tons, at \$1 per ton, \$8 07

Cost of hauling and spreading, varying with distance—average say 40 cts. 3 47

Total, \$11 54

If these estimates are correct, or nearly so, (and the grounds on which they are based are given), the farmer who has plenty of peat or swamp muck at hand, can furnish his plants with food, by means of compost, at a little less than two-thirds the expense of furnishing the same amount from the cattle yard exclusively; and in addition to this great saving of expense, can three-fold his ordinary supply of food for plants, without increasing the number of his domestic animals, or competition with his less provident neighbor, for a supply from the market abroad; his muck or peat bog is a treasure that duly improved will render him independent of all foreign aid to fertilize; and with the farm yard, will doubtless afford him "poudrette" as good as the best, whenever correct views of true economy shall overcome State parsimony and real waste, so far as to put a chemist in the field to develop the eventually great source of fertility and wealth.

If the estimated expense of collecting fertility from the atmosphere, sufficient allowance is made for the unknown precise value of the grass roots and tops; a given quantity of guano, from this source can be furnished, to renovate an exhausted field, at about one fourth the expense of the same amount from the cattle yard. Indeed, if the estimate is correct, well, in some, and perhaps all, cases of land, remote from the farm yard, except the cost of growing upon the spot, an equal amount of fertilizing matter. This seems to leave no doubt as to the most economical method of restoring at least a moderate amount of fertility to our exhausted soils, but should by no means induce the neglect to save and use all the manure and compost which a farm can well furnish.

(Concluded next week.)

A Proposition.

MR. HOLMES.—As it has been usual for Americans to meet together on the 4th of July to celebrate our Independence, in years past, the day has been spent too much in drinking and carousing. The good Washingtonians have, to their honor and the happiness of man, in a great measure put an end to such a course, and morality forbids it.

I propose in all such meetings in Maine the ensuing 4th of July, for the citizens to spend an hour or two in inquiring the best mode of building up, and multiplying the inhabitants of the villages and cities in the State as consumers in them, not loafers. Certain it is that we purchase too much from abroad. Let a shovel, scythe, or something like a Lynn establishment for boot and shoe making be set a going, until we do not buy those articles from other States and countries—or in any other mode that we may retain our consumers and cause others to come among us. So sure as we buy more than we sell, as individuals or communities, we must in the end be bankrupt. Let this be the motto of all—Farmers need consumers, and all need a more dense population to buy goods, eatables, &c.

A CITIZEN OF MAINE.

Gray, June 2, 1842.

N. B. What! the great State of Maine not make a dish kettle or spider to cook their food in, but purchase them from other States where wood is comparatively dear. So with many other necessities.

An Alarming Fact.

MR. HOLMES.—I have recently been informed that it is certainly true, that the inhabitants of the city of New Orleans, and some other of the Southern cities in this nation, spend more for cigars, snuff and tobacco in various forms than would well school their youth and support the preaching of the gospel among them. This startled me. But I perceive we in Maine are on the road. I lately entered a room where two lads sat smoking cigars, filling the room with obnoxious odor—soon there came in a more judicious young man who observed to them that he regretted to see them so foolishly employed.—Said he, "I never disgraced myself by using the nasty weed, Tobacco, in any form—I know there are some boys who think it makes men of them to be seen puffing a long pipe, but to every thinking and wise person it makes a fool of them, or so they act—the habit will soon become formed, and we shall be like the Southern cities," &c. I thought well of his wise remarks. No SUFFY TAKER.

New Gloucester, June, 1842.

RECKLESS BARBARIETY.—By statements in various quarters, it seems that the English are pushing with desperate vigor, the means began by them some time since to get rid of their pauper population. At every opportune occasion, the half-starved inmates of their almshouses are packed like cattle in vessels hired to convey them to the United States. In this way the parish officers of many towns have already freed themselves of a vast number of diseased, blind, decrepit old, deformed and helpless beings.—These poor men and women, who are English by birth—after expending their youth, the flower of their lives—exhausting themselves, body and mind, to subserve the capricious and administer to the wants of a purse-proud, luxurious and never satisfied aristocracy—these broken down people—who, in the extremity of their age and destitution, have the strongest of all human claims upon the sympathies and charities of their countrymen—these unfortunate and suffering beings are now made outcasts by their own fellow citizens—expatriated against their will—sent, in despite of their prayers and tears—thousands of miles over the sea—to a foreign clime; and there, without a single hope this side of the grave—most speedily end their days in wretchedness and misery—deprived even of the solace that their mortal bodies might rest at last, in the land where they were born and labored so long!

Where, in the annals of all the nations of the earth, can be found an act more abhorrently barbarous or execrable than this, Great Britain, the most enlightened and potent of Empires, is now covering up her brother's blood and bloody deeds, by this the blackest and most unnatural of public crimes!—*Eastern Argus*

Over a Century.—We see in the Extra News Letter a notice of Madam Wingate, of Stratham, N.H. widow of the Hon. Paine Wingate, who has commenced her second century. She was born May 1, 1742.

MECHANIC'S ADVOCATE.

An intelligent class can scarce ever be, as a class, vicious, never, as a class, indolent. * * * The new world of ideas; the new views of the relations of things; the astonishing secrets of the physical properties and mechanical powers disclosed to the well informed mind present attractions, which unless the character is deeply sunk, are sufficient to counterbalance the taste for frivolous or corrupt pleasures.—Everett.

A MATHEMATICAL QUESTION.

The difference of the differences of the differences of the differences of the differences of the fifth powers of five numbers which are in arithmetical progression, their common difference being 1, is 300, required its numbers

1, 16, 81, 256
15, 65, 185
50, 100
60

To explain what I mean by the difference of the differences of the differences, &c. let us take an example of 1, 16, 81, 256, getting the difference from right to left until you have reduced it to but one.

SCHOLASTICS.

ANOTHER.—Any number being given, as the leg of a right angled triangle. Required a rule by which either two numbers may be found which will be the hypotenuse, and the other leg in whole numbers.

X. Y.

SPAULDINGS SILK WORM FRAME

The subscriber having had several years experience in rearing silk-worms, and knowing the wants and habits of the worms, has invented an improved method of fitting up a coconery, with feeding frames and changing hurdles, on a plan which is believed to be decidedly superior to any other yet known either in Europe or America. It consists of a double row of feeding frames, two and a half feet wide and twelve feet long. The frames are supported by two upright posts of common sized scantling—the posts framed into cross sills at bottom, when used in a plastered room, or they can be nailed at the top where there are timbers overhead. Though each post is a mortise (at a suitable distance above the floor, say 16 or 18 inches and the same distance from that to the next and so on, one above another, as many tiers as the height of the room will admit,) 8 inches long and one wide; through this mortise the arms are passed to support the feeding frames and shelf to receive the litter. The arms are strips of boards one inch thick. The upper arm 4 inches wide and the lower arm 2; length 5 feet 4 inches, extending, of course two & one half feet each side of the posts. On the top of the upper arm are sawed ganes to receive the slats of the feeding frame. Both arms are through the same mortise, and separated 2 inches, and made fast in the mortise by two wedges driven between them, on each side of the post. The arms and posts thus forming a cross. The ganes are two inches deep, half an inch wide, and two inches apart. The slats of the feeding frame are sawed lath strips of thin board, two inches wide, slit off with a conon slitting gage—so that on each arm two and a half feet long are fifteen slats. The hurdle has a frame on two sides only—4 feet long, made also of thin boards, one inch wide—holes made through them with a bradawl; a needle is then armed with twine and passed through each alternately, exactly like putting the cord through the two side of a common bedstead; the threads one inch apart. The hurdles are 3 feet long and 2 and one half wide, corresponding with the width of the frame. The hurdles are 4 feet long and 2-12 wide, corresponding with the width of the frame. The hurdles may be used without the frame by those who may continue still to use solid shelves, as they save nine tenths of the labor of changing and cleaning the worms, at any age.

To change the worms or to remove them from the hatching table to the feeding frames place a hurdle over them; feed upon it, whole leaves or small branches, and after one or two feeds, the worms will be above the hurdle, then by its two sides remove it to a vacant shelf or on the feeding frame. When necessary to change them again' place over them a duplicate hurdle, and feed as before. After the worms have risen above the hurdle again, remove it, and all the stems, &c. on the first hurdle can be instantly removed. After the worms are placed upon the feeding frame, all the excrementitious matter—sick or dead worms, &c. will fall through the frame to the shelf below. When the worms are about to wind their cocoons, remove the hurdles from the frame, then taking the shelf off the lower arm place it on the frame above. The frame has now been converted into winding chambers, the shelf forming the covering, and the slats forming partitions. The hurdles are now placed on the shelf and the worms assisted in rising to the chambers above them by any means most convenient—perhaps pieces of shingle, an inch wide, or strips of paper attached at one end by a little paste to the slats and hanging down to the worms. When the cocoons are ready for gathering, move the hurdles, litter etc. from the shelf, turn it up-side down and the cocoons are now all in view, either attached to the shelf or remaining in the winding boxes. The floss is left perfectly clean, and the cocoons may be gathered at the rate of a bushel per minute.

This apparatus is calculated not only for large coconeries but may be adapted to any unoccupied room in a dwelling or out-house—as it may be put up or taken down in a few moments and costs little more than plain shelves; and with it one man may attend a millions of worms in a season.

Rights for making and using this apparatus are now for sale by the inventor.

All letters of enquiry (Post paid) will receive immediate attention. Rights to use the hurdles alone, 2 dollars; for the whole apparatus from 5 to 10 dollars, if sent by mail when rights are applied for.

A model may be seen by calling on the undersigned.

Address, A. SPAULDING, M. D.
Marble, Ohio.

REFERENCES

Rev. J. Witherspoon, Hillsboro, N. C.
Daniel Spaulding, Hancock, N. H.
F. O. J. Smith, Portland, Maine.
J. A. Spaulding, Hartland, Vt.
Post Master, Knoxville, Tenn.
Lyman A. Spaulding, Lockport, N. Y.
Darius Spaulding, Pierpont, O.
B. G. Buswell Wheeling, Va.
E. Holmes, Winthrop, Maine.

WOOL MANUFACTURED FROM RAGS. The

Troy Whig says: The machinery recently erected in the brick building near the State Dam, in this city, by A. Stearns & Co. for the manufacture of wool from woolen rags, is now in operation, and is well worthy the attention of the public. The rags are thrown in the first place into a machine in the second story, where they are ground up, and thence passed through another machine in the lower story, filled with water, which cleanses them from all impurities. The wool thus formed is then pressed to free it from the water which it has absorbed, and afterwards sent up a spout with great velocity into the fourth story, where it is dried until fit for use. The wool thus manufactured is sent to Springfield, Vt. where it is carded and spun, and finally made into satinet. The machinery of Stearns & Co. now in operation in this city, is capable of grinding 1,000 lbs. of rags per day. Additional machinery will be erected, which will be capable, if required, of grinding 2500 lbs. per day.—*Atlas*

MODES OF RAISING PONDEROUS ARTICLES.

A wedge is considered to be the most simple of "mechanical powers," and is often used in cases where no other apparatus can be made to apply; as in splitting logs and other adhesive articles. If a massive rock is to be elevated from the ground, a wedge must first be driven between that and its foundation, preparatory to the application of levers. Yet the wedge is in most cases objectionable on account of the friction with which its use is attended. The next, and most common power applied for elevating buildings or large rocks, is the simple lever, commonly called a pry. This usually consists of a long straight beam or pole, one end of which is placed under the object to be raised, while a fulcrum consisting of a stone or block of wood, is placed under the lever, at a short distance from the object to be raised. The opposite extremity then being forced down by the weight of one or more of the workmen, a force is applied to the object to be raised, bearing the same proportion to that applied to the lever, that the distance between the fulcrum and the extreme end of the lever, does to that between the fulcrum and the object. Levers made of iron, and simply denominated "iron bars," are commonly used in raising rocks. A machine called a "bed screw" is frequently used for elevating buildings. It originally consisted principally of a large vertical screw, which was placed on a foundation called the bed, and was turned by levers; but many improvements and variations have been added, till in some instances, the screw has been dispensed with, and a rack and pinion have been substituted. Some of the best in use consist of a vertical iron rack, which is occasionally forced upward by the teeth of a pinion; a gear wheel on the same axle with the pinion being driven by the thread of a horizontal screw, to the head of which is attached a crank. By a machine of this construction, properly proportioned, one man may raise about twenty tons weight. Vertical screws, turned by levers have been frequently used for the purpose of raising vessels to repair. But in these cases a large portion of the power applied is lost in the friction of the screw, and the process is laborious and tedious. This is probably the most awkward and injudicious method that has been applied to that purpose. Another method which has been applied to the purpose of elevating vessels, is decidedly ridiculous, although less laborious than the former. It is called the "hydraulic power," and consists in forcing water into large cylinders, by forcing pumps which are operated by steam power; while the water thus forced into the cylinder moves a piston and piston-rod, to which is connected several stout chains, which passing over corresponding pulleys, descend to a platform, on which rests the vessel to be raised. Now the platform and chains are very judicious; but what propriety there can be found in the use of vastly expensive cylinders and pistons, to be operated by water forced in by other machinery whereas the chains might have been attached directly to a cylinder shaft to be turned by simple gear, is far beyond our comprehension. The projectors of the plan must have entertained the absurd notion, that there was a great and peculiar power produced by pumped water, which could not be obtained by the lever principle of gear-work.—*American Mechanic.*

To be Continued.

A PROTECTIVE TARIFF.—Let us suppose that a number of people should go into a new country and establish a colony. Of course every thing except the almost spontaneous productions of the soil, must be for some time scarce and high in such a community. Now, if the people possessed means of easy communication with older countries, probably all manufactured articles, and in short almost every thing necessary for luxurious and even comfortable life would be at first imported. This, though it might appear for the present interest, would ultimately prove detrimental, since mechanics and manufacturers could not be expected to establish themselves there, and produce the comforts of civilized life at the same rate as prosperous capitalists elsewhere, and they would not make the attempt without encouragement and protection. Hence increase of population, except agricultural, to a great extent would be prevented, while the wealth and productions of the place, would be drained off in exchange for manufactured articles, mechanics always assemble where work is done, and not where articles are consumed. The consequence would be that great quantities of provision would be produced, the market glutted for want of consumers, and prices would become little or nothing from over quantity, while all imported things come at an exorbitant rate. Such is at present the case in the West.

A system of protection would remedy this evil. Manufacturers would flock in and mechanics abound. These, by consuming produce, would enhance its price, and thus benefit the farmer, while competition would soon reduce all productions of art or machinery to a fair profit, as cheap or nearly so, as the manufacturers of older countries. Our country is mostly a new country, and the principles we have mentioned above, hold good in a great degree to it. We shall soon be able to produce articles as cheap as those imported from Europe, while the encouragement we give to a large and industrious class, concentrates wealth and ingenuity among us, and makes a home market for our extensive agricultural productions. But if we cannot manufacture as cheap in this country as they do in Europe it will be because their system of pauper labor competes too injuriously with

our own free and well paid workmen. But shall we prefer such labor? Shall we not make our country free in all things, and depend upon the hardy sinews, the skill and industry of our own independent citizens—for our own means of comfort, and convenience, and happiness?—*Boston Traveller.*

CARBON.

The following table of the quantity of charcoal yielded by different woods was published by Mr. Musket, as the result of experiments carefully made upon the small scale. He says, the woods before being charred were thoroughly dried, and pieces of each kind were selected as nearly alike in every respect as possible. One hundred parts of each sort were taken, and they produced as under:—

Lignum Vitae	afforded 26.0 of charcoal of a grayish color, resembling coke.
Mahogany	25.4 tinged with brown, spongy and porous.
Laburnum	24.5 velvet black, compact, very hard.
Chestnut	23.2 glossy black, compact, firm.
Oak	22.6 black, close, very firm.
Walnut	20.6 dull black, close, firm.
Holly	19.9 dull black, loose and bulky.
Beech	19.9 dull black, spongy, firm.
Sycamore	19.7 fine black, bulky, moderately firm.
Elm	19.5 fine black, moderately firm.
Norway Pine	19.2 shining black, bulky, very soft.
Willow	18.4 velvet black, bulky, loose and soft.
Ash	17.9 shining black, spongy, firm.
Birch	17.4 velvet black, bulky, firm.
Scottish Pine	16.4 tinged with brown, moderately firm.

Messrs. Allen and Pepsys, from 100 parts of the following woods, obtained the quantities of charcoal as under:—

Beech	-	15.00
Mahogany	-	15.75
Lignum Vitae	-	17.25
Oak	-	17.40
Fir	-	19.17
Box	-	20.25

It is observable that the quantities obtained by Messrs. Allen and Pepsys are in general less than those given by Mr. Musket, which may be owing to Mr. Musket not having applied sufficient heat, or operated long enough, to dissipate the aqueous matter of the gaseous products.

To those persons who buy charcoal by weight, it is important to purchase it as soon after it is made as possible, as it quickly absorbs a considerable portion of water from the atmosphere. Different woods, however, differ in this respect. Messrs. Allen and Pepsys found, that by a week's exposure to the air, the charcoal of

Lignum Vitae	-	9.6 per cent.
Fir	-	13.0 ditto.
Box	-	14.0 ditto.
Beech	-	16.3 ditto.
Oak	-	16.5 ditto.
Mahogany	-	18.0 ditto.

The following is a tabular view of the volumes of the different gases which were absorbed in the course of 24 hours, by one of charcoal, in the experiments of M. Theodore de Saussure, which were conducted in a way likely to produce correct results. Each portion of charcoal was heated afresh to a red heat, and allowed to cool under mercury. When taken from the mercury it was instantly plunged into the vessel of gas:

Ammoniacal gas	-	90
Muriatic acid	-	85
Sulphurous acid	-	65
Sulphuretted hydrogen	-	55
Nitrous oxide	-	40
Carbonic acid gas	-	35
Bicarburetted hydrogen	-	35.00
Carbonic oxide	-	9.42
Oxygen gas	-	9.25
Nitrogen	-	7.50
Carburetted hydrogen	-	5.00
Hydrogen gas	-	1.75

Neumann, who made many experiments on charcoal, informs us, that for the reduction of the metallic oxides, the charcoal of the heavier woods, as that of the oak and the beech, is preferable, and that, for common fuel, such charcoal gives the greatest heat, and requires the most plentiful supply of air to keep it burning; while those of the lighter woods preserve a glowing heat with much less draught of air; and that for purposes where it is desirable to have a steady and a still fire, charcoal should be employed which has been made from wood previously divested of its bark, since it is the cortical part which crackles and flies off in sparks during combustion, while the coal of the wood itself seldom does.

For making crayons of charcoal, the willow is the best wood that can be employed, as the softness is uniform in all its parts. Its durability may be seen in several of our old churchyards, where the letters made with lamp-black are still perfect, though the white lead with which the body of the stones was painted is entirely destroyed.

This property of carbon is shown, however, in a more striking manner by the writings that were found in the ruins of Herculaneum, which have retained their original blackness for two thousand years. The ancients wrote with ink made from ground charcoal.

If it be required to purify any carbonaceous matter, to render it fitter for delicate pigments, this may be done by first calcining it in a close vessel, and then fixating it in water slightly acidulated by nitric acid.

The incorruptibility of charcoal was well known to the ancients, and they availed themselves of this property upon all important occasions.

About sixty years ago a quantity of oak stakes were found in the bed of the Thames, in the very spot where Tacitus says that the Britons fixed a vast number of such stakes to prevent the passage of Julius Caesar and his army. These stakes were charred to a considerable depth, had retained their form completely, and were firm at the heart.

Most of the houses in Venice stand upon piles of wood, which have all been previously charred for their preservation. In this country, estates were formerly marked out by charred stakes driven to a considerable depth into ground.—*Ure's Dic.*

Mechanics.

There is no portion of our community having stronger claims upon the sympathy or kind feelings of the other, than mechanics; and there is none in whose success the whole country has a more immediate interest. Our

soil produces the substantial necessities of life, and the commercial balances that so frequently occur and throw every thing into disorder and confusion, producing pecuniary embarrassment and ruin throughout the land, are created, not by our want of raw productions, but by the importation of manufactured articles from abroad—by the employment we give the foreign artisan in preference to our own. To check these importations and reduce these balances is an object of first importance, not only to the real independence of the country, but to the security of property and the accumulations of industry; and upon our own mechanics we must mainly depend for effecting these important objects. And how little is their importance to the country considered. Politicians may clamor about the cause of our revolutions and embarrassments; economists may theorize about the beauties of free trade, and all that sort of thing—yet after all, it is because our artisans or mechanics are not yet able to compete, in all the branches of the mechanic arts, with the foreign manufacture, that these revolutions ensue. And, unfortunately, the effects of these revolutions fall with peculiar severity upon almost the only class who do not contribute to produce them—upon our mechanics and artisans themselves. While they are straining their nerves to supply as large a portion as possible of the domestic demand for manufactured articles, the professional classes, the merchants, and to considerable extent the farmers, are flooding the country with articles produced by foreign labor.

It seems to us wrong, that, in this country of theoretical equality, the ingenious fabricator of an article of mechanism should be placed in the social or political scale below the merchant, the mere retailer of his wares. Yet so it is; the mere trafficker, who is not required to bring an ingenuity or practical skill in aid of his business, except so far as may be necessary to drive a good bargain, generally stands a little ahead of the ingenious, talented, thinking hard working mechanic, who has spent years of application, study and toil, to perfect himself in his avocation.

We have often heard it said, and by mechanics themselves, that it was their own fault that things were so; that they had opportunities for mental culture that were not improved; and that by diligent application of their minds, instead of the pursuit of pleasure, they would be able to stand along side of the more favored classes. This however, is only true to a small extent. It is not generally their fault that they maintain the unimportant station in society that they do. Many, perhaps the most of them, owe their station—their trade, to early misfortune. How few of them had parents to direct their youthful progress to the station it is their lot to fill! The great proportion of them were orphan boys, who were apprenticed rather for the purpose of securing their subsistence during boyhood, than with a view to the pursuit they were to follow in after life—generally with that imperfect education that is procured by a few months attendance upon a common school, or such as is snatched when evenings are too short for work, they commence the struggle of life under disadvantages, and what is worse, under a consciousness of their existence. Without capital, and too often without friends, their whole physical power is taxed to prevent an early prostration of the hopes of prosperity they had formed; and the few who succeeded are indebted to good fortune, and constant unremitting industry for their success.

True, there are leisure hours; but it is hardly the fault of a man whose hours of labor are so many as the mechanic's must necessarily be, that the few hours of leisure are spent in relaxation, rather than mental labor. Some social intercourse is necessary for any man; and it is hardly his fault that he indulges in it, instead of the closet labor of endeavoring, without instruction, to learn what the more favored have learned in their youth.

Tribune.

CREOSOTE.

Creosote may be prepared either from tar or from crude pyroligneous acid. The tar must be distilled till it acquires the consistency of pitch, and at the utmost till it begins to exhale the white vapors of paraffine. The liquor which passes into the receiver divides itself into 3 strata, a watery one in the middle, placed between a heavy and a light oil. The lower stratum alone is adapted to the preparation of creosote.

1. The liquor, being saturated with carbonate of potash, is to be allowed to settle, and the oily matter which floats at top is to be decanted off. When this oil is distilled, it affords, at first, products lighter than water, which are to be rejected, but the heavier oil which follows is to be separated, washed repeatedly by agitation, with fresh portions of dilute phosphoric acid, to free it from ammonia, then left some time at rest, after which it must be washed by water from all traces of acidity, and finally distilled along with a new portion of dilute phosphoric acid, taking care to cohobate, or pour back the distilled product repeatedly into the retort.

2. The oily liquid thus rectified is colorless; it contains much creosote, but at the same time some eupione, &c. It must therefore be mixed with potash ley at 1-12 sp. grav., which dissolves the creosote. The upione floats upon the surface of that solution, and may be decanted off. The alkaline solution is to be exposed to the air, till it blackens by decomposition of some foreign matter. The potash being then saturated with dilute sulphuric acid, the creosote becomes free, when it may be decanted or syphoned off and distilled.

3. The treatment by potash, acid, &c., is to be repeated upon the brownish creosote till it remains colorless, or nearly so, even upon exposure to air. It must be now dissolved in the strongest potash ley, subjected to distillation anew, and, lastly, redistilled with the rejection of the first products which contain much water, retaining only the following, but taking care not to push the process too far.

In operating upon pyroligneous acid, if we dissolve effloresced sulphate of soda in it to saturation, at the temperature of 167° F., the creosote oil will separate, and float upon the surface. It is to be decanted, left in repose for some days, during which it will part with a fresh portion of the vinegar and salt. Being now saturated while hot, with carbonate of potash, and distilled with water, an oily liquor is obtained, of a pale yellow color. This is to be rectified by phosphoric acid, &c., like the crude product of creosote from tar.

Creosote is apparently composed of 76.2 carbon+7 hydrogen, and 16.0 oxygen, in 100 parts. It is an oily looking liquid, slightly greasy to the touch, void of color, having an

acid burning taste, and capable of corroding the epidermis in a short time. It possesses a penetrating disagreeable smell, like that of the nostrils, causes a flow of tears. Its specific gravity is 1.037, at 58° F. Its consistency is similar to that of oil of almonds. It has no action upon the colors of litmus or turmeric, but communicates to white paper a stain which disappears spontaneously in a few hours, and rapidly by the application of heat.

It boils without decomposition at 339° F., under the average barometric pressure; remains fluid at 16° F., is a non-conductor of electricity, refracts light powerfully, and burns in a lamp with a ruddy smoky flame.

When mixed with water at 58° F., it forms two different combinations, the first being a solution of 1 part of creosote in 400 of water; the second, a combination of 1 part of water with 10 parts of creosote. It unites in all proportions with alcohol, hydric ether, acetic ether, naphtha, eupione, carburet of sulphur, &c.

Creosote dissolves a large quantity of indine and phosphorus, as also of sulphur with the aid of heat, but it deposits the greater part of them in crystals, on cooling. It combines with potash, soda, ammonia, lime, bar-yta, and oxide of copper. Oxide of mercury converts creosote into a resinous matter, while itself is reduced to the metallic state. Strong sulphuric and nitric acids decompose it.

Creosote dissolves several salts, particularly the acetates, and the chlorides of calcium and tin; it reduces the nitrate and acetate of silver. It also dissolves indigo blue; a remarkable circumstance. Its action upon animal matters is very interesting. It coagulates albumen, and prevents the putrefaction of butchers' meat and fish. For this purpose these substances must be steeped a quarter of an hour in a weak watery solution of creosote, then drained and hung up in the air to dry. Hence Reichenbach has inferred that meat is cured by smoking; but he is not correct in ascribing the effect to the mere coagulation of the albumen, since *fibrine* alone, without creosote, will putrefy in the course of 24 hours, during the heats of summer. It kills plants and small animals. It preserves flour paste unchanged for a long time.

Creosote, exists in the tar of beech-wood, to the amount of from 20 to 25 per cent, and in crude pyroligneous acid, to that of 1-12. It ought to be kept in well stoppered bottles, because when left open it becomes progressively yellow, brown, and thick.

Creosote has considerable power upon the nervous system, and has been applied to the teeth with advantage in odontalgia, as well as to the skin in recent scalds. But its medicinal and surgical virtues have been much exaggerated. Its flesh-preserving quality is rendered of little use, from the difficulty of removing the rank flavor which it imparts.—*Ures Dictionary.*

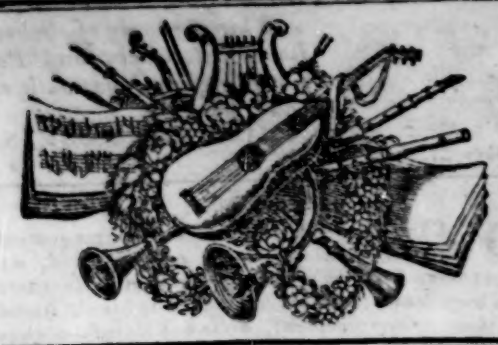
From Mr. Taylor's lecture before the Mechanics' Institute, New York.

THE IGNORANT VOTER. Look at the ignorant man! Strong in muscle, furious in purpose—he is a Sampson without eyes; the slave of appetite; the dupe of the quack; the thrall of the fanatic; the creature of impulses and impressions; the passive instrument in the hands of the political agitator. An ignorant man voting! Holding a ballot he cannot read; carrying it towards the omnipotent ballot-box, to drop it into "the nation's sovereignty!!" Do you see your relation to that man? "He is a partner in this political firm; you cannot withdraw from it, or throw him out;" his lot is your lot—his end, your end. An ignorant man voting is like a blind physician who goes up to the bed with a great club—he strikes—he may hit the disease, he may hit the patient. [Applause and laughter.] And how many blows do you dodge annually, through the ballot-box? How long can we continue to dodge these? It we do not educate this tremendous power of suffrage, like the strength of Sampson, so far from being our protection, it will but serve to bring upon our heads, this temple of our ancestors.—[Loud applause.] We may "go ahead" with the great mass of ignorance, but look out that we break not down midway in our career.

Brick Making.

A discovery has been made by Mr. R. Prosser, of Birmingham, which bids fair to be attended with important results to the interests of architecture. The novelty of Prosser's process consists in the clay being dried, ground to powder, and submitted to pressure in metallic moulds, until the particles cohere together. As there is no water in combination with the clay, no drying process is necessary; consequently the articles made by this method are ready to be fired or burned as soon as they leave the machine. Owing to the great pressure required to cause particles of clay to cohere together, the articles made by this process have greater density than those made in the ordinary way; they are also less porous, and not subject to decay in wet or frost. In addition to these advantages, any architectural device may be impressed upon the clay, which, when burnt, will retain all the sharpness of the original, however elaborately finished. By this process, bricks may be made in all weathers, and with greater economy than by any other plan known at present. The brick press is worked by hydraulic pumps, giving about three hundred tons pressure, thus producing the adhesion and cohesion. The machine delivers the brick (four at a time in the present machine) ready at that instant for the kiln, requiring no exposure to the atmosphere to dry. The whole operation, from the time of putting the powdered clay into the machine to the delivery of the brick, occupies about half a minute. Machinery might readily be constructed to produce fifty bricks a minute.—*Athenaeum.*

RAIL ROADS.—M. Arago read a communication before the Paris Academy of Sciences, from Mr. Nasurith, an English engineer, stating that it had been observed on several lines of railroads



POETRY.

For the Farmer's Advocate.
SLANDER.

Al! who would live if Friendship were denied,
If every heart in selfishness were tied,
No kindred sympathies within the mind,
No mutual loves nor mutual pledges bind.

Or who would live, or wish to live, still more,
Where jarring discord keeps perpetual roar,
Where envy, jealousy, and bitter hate,
Roll round in bosoms at a boisterous rate.

But thanks to heaven; that this is Freedom's land
Where we may live; led by no Tyrant hand,
And when our sky sheds down to peaceful ray,
'Tis at our option then, to go or stay.

Unfettered here, may friendly feelings flow
Though dire injustice strikes a venomed blow,
Though slander weaves a dark and frightful pall,
Her heaviest curse will on the slanderer fall.

MISSCELLANEOUS.

The Hazlewood Family.

A TALE OF THE REVOLUTION.

"Alas, what lofty devotion—what blissful recollections—what high hopes—what unsullied love—what pure affection—what radiant patriotism—has been swallowed up by thee, thou unrelenting past."

"O mother they are coming, they are coming!" shouted little Maria Hazlewood, as she came flying into the apartment where her mother and sister were preparing tea; her dark hair floating loose around her white neck—her blue eyes sparkling with pleasure—and her fine countenance lighted up with animation, as she threw herself into her mother's arms.

"Who, my dear Maria, are coming?"

"Why, brother Charles and Arthur, I saw them on the hill beyond the river;" replied the happy girl, as she hastened down the avenue to meet her brother.

"Heaven be praised!" said Mrs. Hazlewood, as she heard the welcome news; and the quick flush that passed over the features of the eldest sister, the beautiful Ellen, told plainly that Maria's intelligence was no less agreeable to her.

The two last days had been days of fearful anxiety with the Hazlewood family. They had heard of the conflict and victory of the Cowpens—the defeat and flight of Tarleton's invincibles, as they had hitherto been defeated—and the part that Lieutenant Colonel Washington's troops took in that brilliant affair, was proclaimed by every tongue. But in that gallant troop, was a son and a friend; and was it not probable that among the brave men who had sealed the victory with their blood, Charles or Arthur had fallen?

Captain Hazlewood, had early enlisted with all his heart in the service of his country, and fell, mortally wounded, in the disastrous attack on Savannah. He left one son and two daughters; Charles, who, although scarcely twenty, inherited his father's spirit, and had already distinguished himself as one of the bravest in Washington's daring band—the dark-eyed Ellen, now sixteen—and Maria, a bright, innocent, playful creature, five years of age. When the British army threatened the occupation of Charleston, Capt. Hazlewood's family removed to their plantation, on the main branch of the Savannah, about forty miles above Camden. If their residence here was marked with appearance of that splendor and wealth to which they had been accustomed in the city, it was worthy the amiable family that made it their home. The neat, low, white buildings, rose at a considerable distance from the highway, on an eminence covered with fruit and forest trees, and the wild grape vines which threw their luxuriant tendrils from one to the other, had, in the course of years, covered the carriage way that led from the gate, to a continued bower. From the house, through the opening trees, might be seen the hills of Santee, the meandering Catawba, and, at a little distance below, the road that led to the low country as it descended a hill, and crossed the plain and river, in front of the buildings. At this hour the sun threw its last rays over the successive ranges of blue hills that rose in the west—the river lay in the vale like a broken thread of silver—now hid by the sycamores and red cedars that fringed its banks, and now sparkling in the bright rays—the low, soft, soothing tones of the wood dove, and the clear magical notes of the mocking bird, mingled in sweet concert in the oak, locust and magnolias, that surrounded the mansion, and every thing seemed combined to present a picture of perfect quietness and beauty.

"What is the matter with you, my dear Ellen?" said Mrs. Hazlewood, alarmed at the paleness of her daughter, who had been watching with intense interest the two horsemen as they crossed the plain and were now ascending the eminence on foot, with the delighted Maria, laughing and prattling between them.

"It is Charles, but not Arthur," replied Ellen, as she turned away from the window to conceal an emotion she could not suppress;—but there was little time for explanation or conjecture, as at that instant the door opened, and Ellen was clasped to the bosom of her brother; while her mother shed tears of joy, as he pressed her hand.

"My dear mother, I have the pleasure of presenting to you Cornet Clifford, a British officer," said Charles, as he led the stranger forward.

"And your prisoner you ought to have added," said Clifford with a smile as he returned the salutation of Mrs. Hazlewood.

Charles did not notice the remark, for at the instant he was whispering something to Ellen, which covered her face with blushes, while it at the same time removed an immense weight from her bosom, and restored her usual sprightly cheerfulness.

"Charles, what is the matter with your arm?" enquired Maria, as she clung around her brother's neck, and Ellen at that moment saw that his left arm was suspended in a military sash.

"A gash from such a weapon as that," he

carelessly replied, pointing to his sabre that hung against the wall; "a mere accident that soldiers are every day liable to, and which might have been worse."

"I must be satisfied the wound in not severe," said Mrs. Hazlewood.

"I appeal to my friend here who made it," answered the young soldier which a shudder ran over the ladies as they glanced at Clifford.

"A mere flesh wound, and is doing well I assure you," was the reply to Charles, appeal.

"Is that your friend?" enquired Maria seriously; "If he could strike you with his sword he shall never be my friend."

"My sister does not understand the casuistry of war; or perceive, that because men are sometimes enemies, there is no necessity for their being always so," said Hazlewood to the officer.

"She is quite pardonable," replied Clifford, as he kissed the reluctant girl; then pulling off a handkerchief that was tied around his head—said, as he pointed to a deep sabre gash in it—"you must allow my sweet girl, that since your brother cut this, he is at least, as bad as I am."

"No—you are a royalist, and an enemy to my country, and my brother is not," answered Maria.

"Rebel to the very core!" said Clifford with a bitter smile, as he released the girl from his arms, and the conversation was turned into another channel.

The fatigue of the day, added to the effect of the wound he had received made it necessary for Clifford to retire at an early hour, and left Charles at liberty to explain the manner in which he became acquainted with that officer at the siege of Charleston, their meeting at the Cowpens, and the desperate conflict that ensued—the wound he himself had received, and the manner in which he fortunately disabled, disarmed and made him a prisoner.

"And why has he come here with you?" asked Ellen.

"Because he was not exchanged; and as there was a probability that I should be unfit for service a month or two, he chose, instead of following the retreat of the army, to come home with me on his parole of honor, I deign security for his appearance."

"I do not like him, I can see in his countenance that he hates our cause and country; I wish he had not come here."

"I know sister," said Charles, as he gaily tapped his sister's cheek, "that you would much rather have seen Arthur, but he is in pursuit of glory and fame, and when he has acquired enough, he too shall come and see my Ellen."

A deep blush which suffused with crimson the countenance of the beautiful Ellen, was all the reply she made to her sportive brother.

A week, a month passed away—the wound in the head of the royal officer was healed, and he was able to join in all the amusements which Charles projected in and out of doors. To a commanding appearance, Cornet Clifford added a winning manner, which when he chose he could mingle with the attractive frankness of a soldier, and even the republican Maria, began to regard him with less dislike than she at first felt. Carefully avoiding all mention of topics that might give pain he succeeded in securing the favorable opinion of Mrs. Hazlewood; but in spite of his endeavors to please, there was one of the family that continued to regard him with distrust and aversion. That one was the lovely Ellen, who could not help fancying that through the polished and gentlemanlike exterior he assumed, she could discover traces of the unprincipled villain, the profligate libertine.

Though he strove with all the art of which he was master to make a favorable impression upon her heart, to his mortification he found she was invulnerable, and while he was in his heart cherishing the most dishonorable intentions, he found himself more and more fascinated by her charms. Still there was in his language, and in his eye, that which alarmed Ellen and induced her, while she avoided him as much as possible, to hint her dislike to her brother.

"Give yourself no uneasiness about this royalist," said Charles, "to speak, eye to think disrespectfully of you, shall be as much as his head is worth."

Clifford was a man too well versed in duplicity, to excite needless alarm, whatever black designs he might meditate. The younger son of a respectable English family, he had chosen the army for a profession, and attached to the light troops under Tarleton, none were more distinguished for his bravery, or his unbounded licentiousness. From the moment he saw the beautiful Ellen Hazlewood, he had marked her for his victim, and his resolution did not falter when he saw she was the pride of her brother, and the loved one of all around her. He knew that she was disliked by her, and he exulted in the thought that while he humbled the proud girl, a deep blow would be struck at the happiness of some of the sturdiest rebels in Carolina. In the midst of his pains, however, he received a notice of his exchange, and a summons to join Lord Rawdon at Camden. Charles, although his arm was not entirely healed, was unable at the prospect of active service to remain idle, and soon after Clifford departed, hastened to join his corps under Washington.

In the rapid succession of marches skirmishes and battles that ensued, Clifford thought he did not forget the prize he was still determined to possess, found no time for maturing his projects; and a blow from the sabre of another of Washington's troops, at the hard fought battle of the Eutaw Springs, at once banished the recollection of Ellen, and every thing else from his head, for a while, in that struggle Col. Washington was wounded, and fell into the hands of the royalists, and in a furious onset to rescue him, young Hazlewood's horse was shot under him, and he shared the fate of his superior, by being made a prisoner. When after the lapse of two days Clifford recovered his reason, and found that Charles was a prisoner, and in his power, his joy was unbounded; for having him at his disposal he felt certain of being able to subdue the high-souled and virtuous Ellen; and the breathing time the royal army enjoyed after this battle, gave him an opportunity of putting his nefarious plans in a train of execution. Tarleton, who comprehended the nature of his designs, if not the particulars of the plan, granted him permission to leave the army for a few days, and with two tory citizens of the state for his instruments, he departed in disguise for the neighborhood of his victim.

It was late in the evening when a stranger

knocked at Mrs. Hazlewood's and made himself known as the bearer of a message from Charles, informing them that he had been severely wounded, and was a prisoner, and entreating as a favor that Ellen would visit him before his death; which under the guidance of the messenger, he assured her she might do in safety. The man produced a passport from Cornwallis, and played the part assigned him so well, that not a suspicion passed the mind of Ellen or her mother; and although she was sensible of the dangerous nature of the undertaking, her love for her brother did not permit her to hesitate;—and as soon as some refreshments had been provided for the messenger, and she had made a few hurried preparations they set out. They had rode many miles before day began to break, and while they were joined by another horseman who appeared to be traveling the same road with themselves, Ellen's suspicions were excited by the pains her guide took to avoid those places where their appearance might have attracted notice. Some trifling reasons were assigned for this course; and it was not until the forenoon was far advanced, that they paused for the first time at a small log hut in a thick pine wood, that Ellen's fears were converted into reality, by the appearance of the detested Clifford to assist her in alighting. Ellen rejected his offered hand, and entered the hut. A chill of horror passed over her as she saw from its desolate appearance that it was uninhabited, and the fell conviction that she was in the power of a villain flashed upon her mind.

"Where is my brother?" demanded Ellen, turning to Clifford.

"Your brother is not here, but you shall soon have the pleasure of seeing him, and that too, safe and well."

"Safe and well!" repeated Ellen, fixing a searching look on the royal officer, who met it unmoved.

"Yes, dearest Ellen, both, though a prisoner—forgive me, Ellen," he continued as he attempted to take her hand "if to obtain the company of one I shall ever love, I have been compelled to resort to stratagem; and allow me to hope the sight of your brother will not be the less welcome because obtained through my means."

"My brother needs not my presence under such circumstances, and I must insist on being permitted to return immediately to my home," replied the undaunted girl.

"No, Miss Hazlewood, I cannot part with you so easily; but you may rely upon the word of an officer, and a gentleman, that in the camp of his Majesty's troops, you shall be perfectly safe."

Ellen's remonstrances were unavailing, and she was compelled to proceed; and while treated with much respect by Clifford, she trembled for the result. Once with her brother she determined to appeal to Clifford's superiors, confident they would never refuse protection to innocence, or fail to deliver her from the power of a man she believed capable of any enormity.

During the journey and after their arrival at the little village in which the royal army was encamped, Clifford said that nothing was wanting to make Ellen's situation as agreeable as possible, although it was easy for her to see that she was under the strictest surveillance. She found her brother not only a prisoner, but to her surprise, in close custody; and when she remonstrated with Clifford on the subject, and reminded him of the treatment he had experienced when in her brother's power, he answered that circumstances he could not then explain, rendered such a measure necessary. She was not permitted to see him, except in the presence of Clifford, or one of the guard.

Though Clifford had now succeeded in getting Ellen within his clutches, his difficulties in his way he found were not all overcome. She refused for a moment to listen to his fine-spun falsehoods—she treated his professions of love with contempt, and offer of marriage with indignant silence. The building in which Clifford resided, and served as a prison for both Charles and Ellen, was at a little distance, from any other, although considerably within the line of sentries and outposts around the British camp.—There was a fine garden attached to it, and in this, as a mark of particular favor, Ellen accompanied by her female attendant, was allowed to walk; the high picketed fence being deemed sufficient security against any attempt at escape. One mild afternoon, just as the sun was setting, Ellen and her servant observed an old woman on the outside of the garden, who appeared to be waiting their nearer approach.

"It's Peggy McFarlan," said the girl, as Ellen enquired whether she knew her; "and she lives by furnishing the officers of his Majesty with such vegetables as they will purchase and she can procure." As they came up to the enclosure, Ellen perceived she had some clusters of wild flowers and sweet smelling herbs which she offered to sell them. In the one which in consideration of a few pence, she handed to Miss Hazlewood, the latter observed her slip a small piece of paper; and while the eyes of the attendant were directed another way by the woman, Ellen managed to read as follows:—"You are in the power of a villain, but despair not—your motions are watched by those who will save you at every hazard; trust in heaven, be firm, and you are safe." This scrap of paper was signed "A. L.," and with emotions which almost overcame her, Ellen, having first flung the woman another piece of money, and told her when she had any thing else to sell she should be glad to see her, followed the attendant to the house. She found Clifford within, who requested a few minutes conversation with her. Ellen seated herself in silence.

"It has fallen to my lot to be the bearer of unpleasant tidings at this time," said he, as he seated himself near her; "you have not I presume, seen your brother to-day?"

"No, he told me yesterday that he was to appear before a court martial as a matter of form, preparatory to his discharge from confinement—and I have been hourly expecting to be called to him."

"You may also remember that, after remaining in the royal camp for some time, and gaining all the information possible, he forfeited his parole of honor, and by bribing the sentry made his escape."

"I remember no such thing, nor do I believe Charles would have been guilty of so dishonorable an act," replied Ellen with spirit.

Clifford was unmoved. "You have not my dear Ellen made sufficient allowance for the pressure of the circumstances. Much as I respect your brother's bravery and honor, I am compelled, by the decision of the court martial, to believe that the charge was correct."

"Charles will defend his honor with his life," said Ellen.

"In the field he undoubtedly would, but I am obliged to say there is little chance of his ever again joining his rebel countrymen."

"What am I to understand by these words?" said Ellen, turning pale.

"This is a subject on which I would willingly avoid explanation; but—he hesitated.

"Keep me not in suspense, I can bear the worst," eagerly interrupted Ellen.

"You must be sensible my dear girl," he proceeded that such a violation of the laws of war would be overlooked; the fortune of war threw your brother into our hands, as well as several others equally culpable. It was deemed necessary to make an example; lots were cast, and it fell upon your brother."

"And the penalty is death?" said Ellen, in a voice which emotion rendered scarcely audible.

"It is."

"O my mother!"—was all that the distressed girl could utter for some minutes. At last she collected strength to enquire whether there was no hope for him.

"I fear not," was the reply. "The case is clear, and it is the opinion of the court that an example is indispensable, though all regret that it should have fallen to so young and gallant an officer as Lieut Hazlewood."

"You can save him—you will save him—you will not see him die for such a trifle—remember he saved your life."

"I am sorry to say," replied Clifford coldly, "that all my influence has already been exerted in his favor, but in vain."

"Do not despair—plea for his sake—for my mother's—for my own—they cannot refuse to hear you."

"Though I fear it will be useless, I shall comply with your wishes, but it must be on the condition that if I am successful, you will grant me one favor—one request."

"Ask any thing—any thing consistent with honor—any thing a sister's love, a sister's gratitude can perform, and it shall be done," exclaimed the fair girl in breathless eagerness.

"It is said in a few words; you must consent to be mine!"

Ellen, in the earnestness of her entreaty, had drawn towards him—her graceful neck was bent forward—her dark eyes, in which tears were trembling, were fixed—fixed anxiously upon Clifford, to catch the last words of hope he might utter; but when she heard his reply she recoiled as though she had suddenly trod upon a snake; and with a shudder exclaimed—"Never, never!"

"Ellen," said Clifford, in a tone of assumed indifference, "in this affair I shall not attempt to influence your feelings—you will see your brother and it will be for you to say, whether he lives or dies." So saying he left her, and she was soon summoned to the chamber in which Charles was confined.

The sentinel who was stationed at the door had, it is evident, received his instructions, for he allowed Ellen to pass without a question—and while the door was bolted behind her, she found herself in the arms of Charles, and pressed to her bosom.

"Ellen," said he "I must die. The influence of a few cowardly Tories has been too much for innocence; and though I would willingly have lived for the sake of my mother, my country,—yet, thank heaven, I fear not death."

Ellen's heart sunk within her; she could not see a brother so young, so full of bright hopes and high expectations, go down to the grave, when by sacrificing herself she could save him to her family and her country. Her resolution was instantly taken—"No Charles, you must not, you shall not die—another victim will be found."

Charles looked her wildly in the face for a moment, as if he would read her inmost soul: "Accursed wretch he!" he exclaimed, "I see the whole. That villain, Clifford, has procured my condemnation; and thinks that by playing with my love of life, to obtain you on his own terms—but I would sooner be drawn in quarters, than live to see you the slave—the wife—of that vile man."

"Do not, my dear brother, talk so wildly; you know not what a sister's love will enable her to endure: think of you mother."

"Not another word, Ellen, if you love me; my mind is made up; if they choose to put me to death, God will avenge my blood; and my friends I leave to the care of heaven. That hypocrite dared to hint to me the terms on which my life could be spared—they were rejected with disdain—they will ever be rejected."

The distressed girl was aware that expostulation was useless; she could only pray that heaven would avert the threatened evil; and the hour having expired, she was summoned by the sentry to leave the chamber.

"I shall see you once more," said Charles, as he kissed his sister, and led her to the door; "and then, at to-morrow's sunset, I shall show them how a rebel can die."

Ellen, at a late hour, retired to her room, but not to sleep; and after passing the night in framing a thousand resolutions to save her brother, she arose early in the morning to refresh her wearied spirits by a walk in her favorite garden. The sun was rising clear and bright; all the various and confused sounds of a large encampment, the rattle of drums, the neighing of chargers, the hasty galloping of horses, and the march of guards to relieve the outposts, all mingled at once, gave an air of activity to the scene, that accorded with the state of agitation under which Ellen labored.—Gladly would she have met the old woman again, that she might have communicated to her the perilous situation of her brother; but she too, Ellen tho't had deserted her, and again she summoned all her fortitude to meet the evils she considered inevitable.

In the course of the forenoon the detested Clifford entered Ellen's apartment, and seating himself enquired, "whether she had made a decision on his proposal."

"My brother has," she answered, for her tongue refused to utter a word from which might be inferred an unwillingness to save her brother, whatever might be the price.

"Very well, and what says he?"

"He refuses life on such terms."

"Obstinate fool!" exclaimed Clifford, forgetting his usual coolness and caution; he may die if he chooses, but he shall die to night, and before to-morrow's sun rises you are mine, and that on my own terms—remember, it will be on my own terms."

Ellen trembled, when she saw the expression of ferocious licentiousness his countenance assumed; but she replied not. Her eyes were downcast, her head was bowed on her white hand; and when, after a moment, as she heard the door close, she raised her eyes and wiped away the tears that almost blinded her, to her great relief she saw that she was left alone.

Never to Ellen and Charles, did a day appear to haste away with such fearful rapidity; and as the evening came on, the latter could plainly see from his window the preparations making for his execution. It was an inexpressibly bitter moment. Life, with its ten thousand charms—the claims of his mother & sisters—and, more than all those of his country,—came over his mind with such painful distinctness, that he wept, and, had Ellen repeated her offer that she had before made, he might have lived. It was but a moment, however, and the proud consciousness of innocence, and reliance on the justice of his country, enabled him to rise above his fears and his regrets.

The place selected for his execution, was on the verge of an open pine wood, at a little distance from the garden walls; and as the descending sun cast its last yellow rays on the green tree tops, the roll of the muffled drum, and the slow and heavy tread of the troops that had been drawn out for the occasion, announced to the prisoner that his hour had come; and, surrounded by bayonets, he proceeded to the designated place. The grave was already dug; and as it was evidently the wish of the royal officers to make as deep an impression as possible by the death of the rebel, however unjust his sentence might have been, the ground was thronged by an immense multitude, both of citizens and soldiers, who were not on duty. When Charles arrived, a deep and suppressed murmur ran thro' the crowd, but this expression of pity was instantly silenced by the guard. The file of men was drawn up for his execution; a venerable clergyman had administered the consolations of religion, and he was directed to kneel to meet his fate. To do this, or to be blindfolded, young Hazlewood refused; and, with his hands folded on his bosom, stood motionless as a statue.

The fatal moment had almost arrived, when the gate of the garden opened, and Clifford, with the pale and beautiful Ellen on his arm, was observed approaching. Passing through the guard, who stood with their arms at rest, Ellen no sooner saw Charles than she threw herself into his arms; and with all that passionate eloquence which belongs to woman, besought him to live.

"That you may become the slave and victim of Clifford's vile passions?" said he, in a tone which reached only her ear.

"Oh God; no, never!" she hastily exclaimed; but when you are safe, I can die, and my—"

"I know what you would say, my dear sister," said Charles, tenderly kissing her, as he interrupted her words; "but I must not hear them now: heaven will bless and keep you—farewell!" Then releasing her arms, he turned to the officer of the guard, and said in a voice, firm as when in his father's house, "I am ready!"

But the fearless girl clasped her arms around his neck, and placing herself between her brother and the file of men, declared she would die with him. It was in vain that Charles remonstrated; she was immovable.

"Tear them apart!" cried Clifford, to two or three of his ready minions. "Tear them apart!" he sternly repeated, as he saw that reluctance was evinced, and that all around were sensibly affected by the spectacle of generosity and affection between them.

The peremptory tone in which he spoke, had the effect of rousing the attention of some of his followers, and the rough hands of two or three of the soldiers, were already on the fair girl,—when a sudden shout was heard on the verge of the wood, mingled with a scream from the sentinel at that instant, the terrible cry of "The rebels!"—the rebels!" was echoed from every quarter. All eyes were instantly turned to a party of horsemen which had burst from the wood, and with their sabres flashing around their heads, were bearing down all before them like a torrent. They stayed not to kill; those of the multitude that could not get out of the way, were trampled beneath the feet of their horses; and before Clifford could credit the evidence of his senses, the fiery horsemen, which were instantly known as part of Washington's daring band, were upon him. Jammed together by the rush of the crowd, the guard could make no resistance: they were swept away by the torrent—and a blow from the sabre of Arthur Lee, clef Clifford's head from his shoulders, & cut short the order which was on his lips, "Shoot the damned—"

An order which was intended to ensure the destruction of both Charles, and his sister. What had passed was the work of a moment;—in another, Charles was mounted on a fresh horse; the hall insensible Ellen was in Lee's arms, and the whole party disappeared by the same route, and as rapidly as they had advanced. So daring was the attack, that the British legions, of which the fallen Clifford was an officer, and which was instantly under arms, conceiving it impossible that so hazardous an exploit would be attempted unless backed by a formidable force, lost so much time in reconnoitering, that, aided by superior knowledge of the country, Lee and his rescued friends got off safe, and without losing a man.

The remainder of our narrative may easily be conjectured. No sooner had the surrender of Cornwallis secured the independence of America, than Charles and Arthur hastened to the happy quiet of their home, where the union of the high-minded and heroic Lee, with the beautiful and constant Ellen Hazlewood, united in still closer ties these respectable families. Happy in the love and respect of all around them—with a consciousness that the smile of an approving heaven were over them—Arthur and Ellen long enjoyed the pleasure of seeing their country free and prosperous; and in the bliss of the present, forgot the dangers and privations of the past.

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